

ABSTRACT

A method of forming and a device including an interconnect structure having a unidirectional electrical conductive material is described. The unidirectional conductive material may overlie interconnect materials, and/or may surround interconnect materials, such as by lining the walls and base of a trench and via. The unidirectional conductive material may be configured to conduct electricity in a direction corresponding to a projection to or from a contact point and conductive material overlying the unidirectional conductive material, but have no substantial electrical conductivity in other directions. Moreover, the unidirectional conductive material may be electrically conductive in a direction normal to a surface over which it is formed or in directions along or across a plane, but have no substantial electrical conductivity in other directions. Finally, the unidirectional conductive material may have properties tending to reduce metal diffusion, reduce electron migration, provide adhesion or bonding, and/or act as an etch stop.